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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dr. G. A. (Jim) Shirazi, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

August 18, 1983

#996658

Mr. Wendell J. Owen
Co-op Mining Company
P. O. Box 1245
Huntington, Utah 84528

RE: Hydrologic Deficiencies for
NOV's N83-1-2-3, N83-5-2-2,
N83-5-5-3 and N83-5-8-3
Bear Creek Canyon Mine
ACT/015/025
Folder Nos. 3 and 7
Emery County, Utah

Dear Mr. Owen:

The hydrology staff has reviewed Co-op's submittals dated July 8, 1983, July 18, 1983 and August 8, 1983 which contain the information and calculations prepared for Co-op by Horrocks and Carollo Engineers.

The material presented has been found to be lacking in description and detail in certain portions and hence terminations of NOV's N83-1-2-3; N83-5-7-1; N83-5-2-2, #2; N83-5-5-3, #2; and N83-5-8-3, #3 are not possible at this time.

The designs submitted need clarification before review can proceed. It is requested that the applicant submit the following information.

Drainage on Scalehouse Area - N83-5-5-3, #2

The Division previously calculated that the catch basin should contain a sediment volume of 2,024 cubic feet and a runoff volume of 9,989 cubic feet. This totals a volume of 12,013 cubic and does not take into account the freeboard. This information was sent to you in our May 5, 1983 letter. Horrocks and Corollo Engineer's calculated a volume as approximately 20 percent less and does not address sizing for the freeboard

There is a discrepancy in the acreage which drains into the catch basin, the Division calculates 2.4 acres whereas Horrocks and Corollo Engineers calculate 1.7 acres. We suggest that this be rechecked.

The drainage ditches emptying into the catch basin should be labelled on a map and referenced to accompany calculations and designs.

Culverts should be labelled and referenced on a map and referenced to their corresponding calculations and designs.

Horrocks and Corollo Engineers prescribe a catch basin with dimensions of 50 feet by 50 feet. The Division recommends a rectangular shaped catch basin which exhibits the determined volume so that the basin is at least 50 feet away from the stream channel.

The sizing for the undisturbed ditch on the east side, drainage area and calculation for the undisturbed ditch is missing. Please provide this.

Drainage Ditches Adjacent to Crusher Pad and on Mine Yard Area - N83-5-2-2, #2

A separate design sheet should be used for each diversion and culvert with the requested information clearly labelled on an adjoining map. The needed information is probably contained in existing reports, however, it needs to be consolidated into a legible and distinguishable form as required by UMC 771.23(b): "Information set forth in the application shall be presented clearly and concisely. . . ."

Numbers or names should be used to identify structures (culverts, diversions, etc.) on a map so they can clearly be cross-referenced to a labelled set of calculations.

Each drainage area should be outlined on a map and clearly referenced to by name or location and acreage when used in calculations. Maps should exhibit contour invervals and scale, and be of sufficient size to delineate structures.

Calculations should show derivations of runoff coefficients, rainfall intensity values, slopes of diversions or culverts, velocities (maximum and minimums) and riprap sizing.

Plans should be submitted that show embankments to control headwater depths.

Maps should indicate areas where riprap will be placed to control excessive velocities, that is where velocities can exceed five feet per second along a diversion, at culvert inlets and outlets.

Dimensions of diversions should allow for a 0.3 foot freeboard. All diversions should be labelled on a map and cross-referenced with the calculations.

Private Haul Road - N83-1-2-3, #3

It is not clearly understood if the designs are meant to route the drainage from slope A (undisturbed area east of the scalehouse) through the 18-inch culvert and into the catch basin. If so, the Division cannot allow this.

Plans should provide the calculations for slopes of undisturbed areas. A more detailed map should be used which outlines the undisturbed areas, if possible.

The plans are unclear as to how the undisturbed runoff will be controlled at the culvert intakes. More detail is needed to show the headwater embankment and trash racks. Cross-section 'A-A' should be indicated on the longitudinal profile.

Undisturbed Drainage - N83-5-8-3, #3

The Division has previously stated that the culvert to direct undisturbed drainage under the upper storage and loadout pads should be at least 30 inches in diameter if the headwater is to be a factor of 1. Co-op has committed to using a 30-inch culvert, yet, in the drawings submitted July 29, 1983, it is shown that an 18 inch culvert is labelled on the map. In the July 18, 1983 submittal, Horrocks and Corollo Engineers suggested that a headwater of 20 inches could be utilized with the 18-inch culvert. These calculations are incorrect and infeasible because a much greater headwater would be needed than 20 inches.

Cross-sections and plans showing inlets, outlets, riprap, angle of pipe and trash racks must be submitted.

Stream Channel Culvert

In the July 18, 1983 submittal, Co-op commits to using 84 inches of fill (UMC 817.43, reply) above the 60-inch stream channel culvert. The Division (as stated previously) requires only a 30-inch embankment above the top of the culvert.

Cross-sections and drawings need to be submitted showing inlet, outlet, embankment and trash rack.

We would like to recommend that a meeting be set up between Co-op and your engineers and the Division's hydrology staff to resolve any concerns that may exist with these deficiencies. Please contact me at your earliest convenience to request a meeting should you desire it.

Sincerely,

David W. Darby

DAVID W. DARBY
RECLAMATION HYDROLOGIST

DWD/btb

cc: E. Hooper, DOGM
J. Whitehead, DOGM
J. Helfrich, DOGM